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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,441	02/27/2004	Peter Ascheuer	1890-0062	5002

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Indianapolis, IN 46204-5109

EXAMINER

ALIA, CURTIS A

ART UNIT	PAPER NUMBER
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2609

MAIL DATE	DELIVERY MODE
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09/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/789,441	ASCHEUER ET AL.	
	Examiner	Art Unit	
	Curtis Alia	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20,21,23-25,28,29,31-37,39 and 40 is/are rejected.
- 7) ☒ Claim(s) 22,26,27,30 and 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>27 February 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 28 February 2003. It is noted, however, that applicant has not filed a certified copy of the German application as required by 35 U.S.C. 119(b).
2. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) prior to declaration of an interference, a certified English translation of the foreign application must be submitted in reply to this action. 37 CFR 41.154(b) and 41.202(e).

Failure to provide a certified translation may result in no benefit being accorded for the non-English application.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested:
Method and system for multi-channel data transmission to a plurality of subscribers in a Bluetooth network.

Claim Objections

4. Claims 22, 24, 26, 34 and 37 are objected to because of the following informalities: For claim 22, on line 2, the phrase "causing data exchange at during" should be changed to --- causing data exchange during ---. The same is true for claim 34, line 10. For claim 24, on line 4, the terms "the sniff mode" and "the park mode" have not been previously referred to in that claim, or any claim from which it depends. It is suggested to change "the sniff mode" to --- a sniff mode --- and "the park mode" to --- a park mode ---. For claim 26, the phrase "and the time

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slot" should be changed to --- and the second time slot ---. For claim 37, on line 1, the phrase "according to one of claim 34" should be changed to --- according to claim 34 ---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 39 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 39 and 40 both depend from preliminarily cancelled claim 16, therefore it is unclear as to what limitations are to be included into these claims and constitute as vague and indefinite. Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 20, 23, 28, 29, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over the background of Paryani (US 2003/0026269), hereinafter referred to as Paryani, in view of Sakamoto et al. (US 2004/0202125), hereinafter referred to as Sakamoto.

For claims 20, 23, 31, and 32, Paryani discloses a method for data transmission comprising establishing a first communication channel between a master subscriber and a first slave subscriber, operating the first communication channel to perform data exchange during a first time slot followed by a first subsequent time slot in which no data exchange occurs, establishing a second communication channel between the master subscriber and a second slave subscriber, operating the second communication channel to perform data exchange during a second time slot followed by a second subsequent time slot in which no data exchange occurs, wherein at least one of the group consisting of the first communication channel and the second communication channel includes an SCO data link (paragraph 11, lines 2-7), wherein slot-based data interchange takes place between the master subscriber and the first and second slave subscribers (see SCO link data transfer, paragraph 11), wherein frame-based data interchange takes place between the master subscriber and the first and second slave subscribers (see ACL link data transfer, paragraph 11).

For claim 20, Paryani discloses all of the limitations with the exception that the method further comprises operating the second communication channel including synchronizing the second communication channel to the first communication channel. Sakamoto, from the same field of endeavor, teaches the provision of synchronizing multiple communication channels with each other. Thus, it would have been obvious to a person having ordinary skill in the art at the

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time of the invention to synchronize the communication channels connecting each of the slave devices to the master device. A synchronization unit can be implemented into the network, and would be responsible for synchronizing the channels with one another. The motivation for including the synchronization unit to synchronize the channels would be so that multiple devices could share any of the available channels on the network.

For claim 23, Paryani and Sakamoto teach all of the limitations with the exception that the time interval of $T_{SCO} = 4$ time slots or 6 time slots. However, it is well known in the art to choose the values 2, 4 and 6 for T_{SCO} as defined in the Bluetooth standards. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to omit the value 2 from the options for the parameter T_{SCO} , leaving 4 and 6 as the only values.

For claim 28, Paryani and Sakamoto teach all of the limitations with the exception that a period of the first communication channel is an integer multiple of a period of an SCO communication channel operating in a first mode, the period of the SCO communication channel being one of the group consisting of four time slots or six time slots.

For claim 29, Paryani and Sakamoto teach all of the limitations with the exception that a period of the second communication channel is an integer multiple of a period of the first communication channel. However, it is well known in the art that a channel with a period with an integer multiple of the period of another channel is still synchronized with that other channel because their phases are not offset. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to increase the period of one channel without affecting the synchronization with the other channel(s). This can be done by ensuring that the phases are not offset. The motivation for increasing the period to an integer multiple of another

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channel's period is to keep the channels synchronized while allowing longer time slots for the devices to transmit during.

For claim 33, Paryani and Sakamoto teach all of the limitations with the exception of employing a programmable unit to synchronize the second communication channel. Sakamoto, from the same field of endeavor, teaches the provision of incorporating a synchronous selection unit that is responsible for synchronizing multiple communication channels (see paragraph 10, lines 11-16). Thus it would have been obvious to a person having ordinary skill in the art at the time of the invention to employ a synchronization unit to handle the synchronization of a plurality of communication channels. A synchronization unit can be implemented into the system by including the device as another slave device or connecting it directly to the master. The motivation for modularizing a separate synchronization unit is that little to no synchronization circuitry would be needed in each slave device, as it would all be handled by the synchronization unit.

10. Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paryani.

For claims 34, 35 and 37, Paryani discloses a data transmission system comprising a master subscriber (see paragraph 10, line 1), first and second slave subscribers operable to communicate data packets with the master subscriber by radio using a time slot method (see paragraph 10), a first communication channel providing data interchange between the master subscriber and the first slave subscriber and a second communication channel providing data interchange between the master subscriber and the second slave subscriber (see paragraph 11), further comprising a maximum of five additional slave subscribers, and wherein the master subscriber, the first slave subscriber, the second slave subscriber, and the additional slave

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subscribers are simultaneously actively involved in the data interchange (see paragraph 10, lines 1-3), wherein the data transmission system includes a cordless digital communication system (see paragraph 13, lines 1-6).

For claim 34, Paryani teaches all of the limitations with the exception that the second communication channel performs data exchange during a specified time slot, the specified time slot determined based upon a time slot in which data exchange occurs in the first communication channel. However, it is well known in the art for two slave devices communicating with a master device to use specific time slots based on the available time slots not used by the other devices. If the first slave device uses time slots 1, 2, and 4, then the second slave device may use time slots 3 and 5, the use of one device's time slots depends on the time slots the other device has used. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to realize that time slots used by the second slave device would be based upon the time slots used by the first slave device.

For claim 36, Paryani teaches all of the limitations with the exception that the master subscriber and at least one slave subscriber can be operated in an operating mode in which data is interchanged periodically in first time slots and no data is interchanged in adjacent second time slots. However, it is well known in the art for data to be sent during one time slot and no data to be sent in a subsequent time slot. If a slave device was constantly interchanging data with the master, then the other slave devices would never be allocated time slots to interchange data, therefore there must be times in which that slave device interchanges no data.

11. Claims 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paryani in view of Kim et al. (US 2003/0103487).

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For claim 21, Paryani teaches all of the limitations with the exception that the method further comprises operating the first communication channel in one of the group consisting of a sniff mode and a park mode. Kim, from the same field of endeavor, teaches the standard in Bluetooth including power-saving modes of operation, including (but not limited to) the sniff mode and the park mode. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate the power-saving modes into the Bluetooth network. The power-saving modes can be implemented into the network of Paryani by conforming the network to the Bluetooth standards specifications, which teach the implementation of these modes. The motivation to combine such teachings is that as a device does not need to be used, it can save power while still being synchronized to the master.

For claim 24, Paryani discloses that at least one of the group consisting of the first communication channel and the second communication channel includes an ACL data link (see paragraph 11).

For claim 24, Paryani teaches all of the limitations with the exception that the ACL data link is operated in at least one of the group consisting of the sniff mode and the park mode. Kim, from the same field of endeavor, teaches the standard in Bluetooth including power-saving modes of operation, including (but not limited to) the sniff mode and the park mode. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to incorporate the power-saving modes into the Bluetooth network. The power-saving modes can be implemented into the network of Paryani by conforming the network to the Bluetooth standards specifications, which teach the implementation of these modes. The motivation to

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combine such teachings is that as a device does not need to be used, it can save power while still being synchronized to the master.

12. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paryani in view of Sakamoto, in further view of Reunamaki (US2004/0165576).

For claim 25, Paryani and Sakamoto teach all of the limitations with the exception that the method further comprises determining a synchronization parameter for synchronization of the second communication channel, the synchronization parameter defining a phase offset for data interchange between the master subscriber and each of the first and second slave subscribers via, respectively, the first communication channel and the second communication channel. Reunamaki, from the same field of endeavor, teaches the provision of synchronizing all of the slave subscribers in the piconet to the phase of the frequency hopping sequence of the master (see paragraph 4). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to synchronize the slave devices in the Bluetooth network by time and hop to the master device. The synchronization of the slave devices to the master device can be implemented into the Bluetooth network by sharing phase and frequency hop sequence among all of the devices in the network when the network is being set up. The motivation to combine such teachings is that the 2.4GHz radio frequency used will not pick up interference from other devices operating at that frequency band.

Allowable Subject Matter

13. Claims 22, 26-27, 30, and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

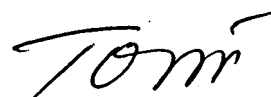
14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Liang (US 2002/0150147), You et al. (US 2003/0031231), Rune (US 2003/0081603), Liu (2004/0176065), Kardach (US 2004/0204031), Diamond et al. (US 2005/0254525), Jose (US 7,035,235).

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis Alia whose telephone number is (571) 270-3116. The examiner can normally be reached on Monday through Thursday 8:00AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on (571) 272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CAA



**DANG T. TON
SUPERVISORY PATENT EXAMINER**